

Application No. 10/580,890
Amendment Dated: October 5, 2009
Reply to Office Action Dated September 4, 2009

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) ~~Claims~~ A process for preparing a cathode active material for a lithium secondary battery, having a formula $\text{Li}_{1+\delta} [\text{Ni}_x \text{Mn}_{x-y/2} \text{Co}_{1-2x-z} \text{M}_y \text{N}_z] \text{O}_{2-a} \text{P}_a$ or $\text{Li}_{1+\delta} [\text{Ni}_x \text{Mn}_{x+y} \text{Co}_{1-2(x+y)} \text{M}_y] \text{O}_{2-a} \text{P}_a$ ($\text{M} [=]$) is selected from the group consisting of Mg, Zn, Ca, Sr, Cu[,] and $\text{Zr, N} [=]$ is selected from the group consisting of Fe, Al, Ga, In, Cr, Ge[,] and $\text{Sn, P} [=]$ is selected from the group consisting of F[,] and $\text{S, } -1/10 \leq \delta \leq 1/10, 0 \leq x \leq 1, 0 \leq y \leq 1/10, 0 \leq z \leq 1/10[,]$ and $0 \leq a \leq 0.3$), comprising the steps of:

simultaneously, adding a metal precursor, an aqueous ammonia solution and a basic solution to a reactor and mixing and precipitating them to obtain a metal composite hydroxide, wherein the reactor has a structure in which rotary vanes are designed in a reverse vane type, and baffles are spaced apart from the inner wall of the reactor; and

mixing and reacting the metal composite hydroxide with a lithium precursor to obtain a lithium metal composite oxide.

2. (original) The process as set forth in claim 1, wherein an aqueous solution containing more than two metal salts is used as the metal precursor.

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3. (original) The process as set forth in claim 2, wherein the concentration of the aqueous ammonia solution is between 0.2 and 0.3 of the aqueous metal solution.

4. (original) The process as set forth in claim 1, wherein a retention time of the metal precursor in the reactor is between 5 and 10 hours.

5. (original) The process as set forth in claim 1, wherein the basic solution is added to make a pH of 11.0 to 11.5.

6. (original) The process as set forth in claim 1, wherein in the step of obtaining the lithium metal composite oxide, citric acid, stannic acid, glycolic acid or maleic acid is used as a chelating agent.

7-15. (cancelled)